

## REMARKS

The remainder of this Amendment is set forth under appropriate subheadings for the convenience of the Examiner.

### Information Disclosure Statement

A Supplemental Information Disclosure Statement (SIDS) is being filed concurrently herewith. Entry of the SIDS is respectfully requested.

### Amendments to the Claims

Claims 14 and 15 have been amended to more clearly define the claimed invention by reciting that the A atoms substitute for Li atoms and the Co and B atoms substitute for Ni atoms of the structure of  $\text{LiNiO}_2$ . Support for the amendment can be found in the specification, for example, page 8, line 25 through page 9, line 19 and Examples 1 through 3 and in Claims 14 and 15, themselves. For example, the empirical formula  $\text{Li}_{x_1}\text{A}_{x_2}\text{Ni}_{1-y-z}\text{Co}_y\text{B}_z\text{O}_a$  of Claims 14 and 15 clearly shows that the Co and B atoms substitute for the Ni atoms.

New Claims 21-23 have been added. New Claims 21-23 are identical to Claims 16, 18 and 19, as originally filed.

No new matter has been added.

### Rejection of Claims 14-15 and 17 under 35 U.S.C. § 102(b)

Claims 14-15 and 17 have been rejected under 35 U.S.C. § 102(b) as being anticipated by JP 8-315819 to Tokuo, *et al.* (hereinafter “Tokuo, *et al.*.”) Claims 14 and 15 have been rejected under 35 U.S.C. § 102(b) as being anticipated by JP 1-208743 to Tadashi (hereinafter “Tadashi”).

As amended, Claim 14 is directed to a lithium battery comprising a cathode that includes a composition having an empirical formula  $\text{Li}_{x_1}\text{A}_{x_2}\text{Ni}_{1-y-z}\text{Co}_y\text{B}_z\text{O}_a$ , where the A atoms substitute for Li atoms and the Co and B atoms substitute for Ni atoms of the structure of  $\text{LiNiO}_2$ . As amended, Claim 15 is directed to a cathode comprising a composition having an empirical formula  $\text{Li}_{x_1}\text{A}_{x_2}\text{Ni}_{1-y-z}\text{Co}_y\text{B}_z\text{O}_a$ , where the A atoms substitute for Li atoms and the Co and B atoms substitute for Ni atoms of the structure of  $\text{LiNiO}_2$ .

As clearly set forth in amended Claims 14 and 15 and in the specification on page 8, line 25 through page 9, line 19, the cathode material of the invention includes A, Co and B atoms in  $\text{LiNiO}_2$  material, where the A atoms replace the Li atoms and the Co and B atoms replace the Ni atoms of the structure of  $\text{LiNiO}_2$ . That is, for example, the sum of the mole ratio of Ni (1-y-z), Co (y) and B (z) atoms in the cathode material of the invention is equal to 1.

Tokuo, *et al.* disclose a positive active material having formula  $\text{Li}_1\text{Ni}_b\text{M}^1_c\text{M}^2_d\text{M}^3_e\text{O}_2$ , where  $\text{M}^1$  is at least one element selected from Co, Mn and Fe,  $\text{M}^2$  is at least one element selected from B, Al, In and Sn, and  $\text{M}^3$  is at least one element selected from Mg and Zn. However, there is no disclosure or suggestion in Tokuo, *et al.* of Applicants' claimed cathode material having an empirical formula  $\text{Li}_{x_1}\text{A}_{x_2}\text{Ni}_{1-y-z}\text{Co}_y\text{B}_z\text{O}_a$ , where the A atoms substitute for Li atoms and the Co and B atoms substitute for Ni atoms of the structure of  $\text{LiNiO}_2$ . In particular, in the composition of the materials of Example 2 of Tokuo, *et al.* (see [0024]), having the mole ratio of the material of Li: Ni: Co: Al: Mg equal to 1.03: 0.88: 0.10: 0.01: 0.01, the sum of the mole ratio of Ni, Co and Al is **0.99, not 1.0**.

As with Tokuo, *et al.*, although Tadashi discloses a positive electrode active material of  $\text{A}_w\text{Mg}_v\text{Ni}_x\text{M}_y\text{B}_z\text{O}_2$ , where A is at least one element selected from alkali metals, M is at least one element selected from Mn and Co, there is no disclosure or suggestion in Tadashi of the cathode material having an empirical formula  $\text{Li}_{x_1}\text{A}_{x_2}\text{Ni}_{1-y-z}\text{Co}_y\text{B}_z\text{O}_a$ , where the A atoms substitute for Li atoms and the Co and B atoms substitute for Ni atoms of the structure of  $\text{LiNiO}_2$ .

Neither Tokuo, *et al.* nor Tadashi, teach or suggest the distribution of the A, Co and B atoms in the cathode materials, as claimed in amended Claims 14 and 15.

Therefore, Claims 14 and 15, as amended, are novel over Tokuo, *et al.* and Tadashi. Claim 17 depends from Claim 15. Thus, Claim 17 also is novel over Tokuo, *et al.* and Tadashi. Applicants respectfully request reconsideration and withdrawal of the rejection.

#### Rejection of Claims 14-15 under 35 U.S.C. § 102(e)

Claims 14 and 15 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,274,272 to Peres, *et al.* (hereinafter "Peres, *et al.*")

Peres, *et al.* disclose an active cathode material having the formula of  $\text{Li}_L\text{Ni}_{(1-C-A-M)}\text{Co}_C\text{Al}_A\text{Mg}_M\text{O}_2$ . However, there is no disclosure or suggestion in Peres, *et al.* of the cathode material having an empirical formula  $\text{Li}_{x_1}\text{A}_{x_2}\text{Ni}_{1-y-z}\text{Co}_y\text{B}_z\text{O}_a$ , where the A atoms substitute for Li atoms and the Co and B atoms substitute for Ni atoms of the structure of  $\text{LiNiO}_2$ , as claimed in

Claims 14 and 15. Rather, in the cathode material of Peres, *et al.*, all of the Mg, Co and Al atoms replace Ni atoms of LiNiO<sub>2</sub> material, as evident from the formula of Li<sub>L</sub>Ni<sub>(1-C-A-M)</sub>Co<sub>C</sub>Al<sub>A</sub>Mg<sub>M</sub>O<sub>2</sub>, i.e., the sum of the mole ratio of Co (C), Al (A), Mg (M) and Ni (1-C-A-M) is 1.

Thus, the subject matter of Claims 14 and 15 is novel over Peres, *et al.* Reconsideration and withdrawal of the rejection are respectfully requested.

Allowable Subject Matter

Claims 16, 18 and 19 have been objected to as being dependent upon a rejected base claim. The Examiner stated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Originally-filed Claim 16 has been rewritten as new independent Claim 21, including all of the limitations of base Claim 15 as originally filed. New Claims 22-23 depend from Claim 21, and identical to Claims 18-19, as originally filed. Thus, new Claims 21-23 are believed to be allowable.

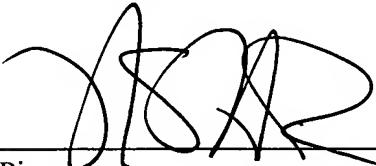
**SUMMARY AND CONCLUSIONS**

Claims 14 and 15 have been amended to more clearly define the claimed invention. New Claims 21-23 are identical to Claims 16, 18 and 19, as originally filed. As discussed above, Claims 14-15, as amended, and Claim 17 are novel over the cited references. Thus, it is believed that Claims 14-19 and 21-23 are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

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